THE RELATIONSHIP BETWEEN CHANGES IN SOCIAL VALUE OF NURSERY SCHOOL CHILDREN AND THEIR CREATIVE ABILITY

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To

My husband, Phillip

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CHAPTER I

INTRODUCTION

Purpose

The purpose of this study is to investigate the relationship between changes in the social value of nursery school children and their creative ability. The social value of a child is determined by his capacity to arouse altruistic responses in his peers and by the extent to which his peers desire to be near him or want his company. Creative ability, per se, will not be measured in this study, but rather a child's freedom to express himself in exploring and manipulating his environment will be measured. This freedom is accepted as a characteristic essential for the expression of creative ability and therefore as indicative of potential creativity. The change in the social value of each nursery school child from the beginning of the school year to the end will be measured and the relationship of this change to potential creativity will be studied.

Definitions

Social value is a more inclusive term than sociometric status. Social value includes (a) an individual's desirability as an associate and (b) an individual's disposition for evoking altruistic responses in others.

Potential creativity is essentially unexpressed creativity and is assumed to exist when an individual is psychologically free to express his curiosity and imagination by exploring and manipulating his environment.

Problem

Considerable interest has been shown in the study of creative ability; and the idea that creativity should be encouraged in order that our society benefit from the efforts of creative individuals is well accepted.

Throughout the literature one finds attention focused upon factors which stifle and factors which encourage creativity. Beyond this, logically, some concern is shown over the fact that the extent to which society can benefit from the creative individual may be affected by his interpersonal relations. Some creative adults seem to have given up or never acquired many of the characteristics necessary for good interpersonal relations. These include such things as warmth, capacity for friendly cooperative relations, social responsibility and the absence of hostility and anxiety. Seemingly this has occurred as the creative individual has tried to remain autonomous.

"Creativity is not a static quality present in a fixed amount in a given person, but rather it is susceptible to considerable increase given conditions of high personal motivation and social support; and susceptible to considerable decrease given conditions of interfering motivations and alien social climate." (10, pp.5). The implication of this statement is that social factors important in personality development can affect the development of creativity either favorably

or adversely. Before an understanding can be gained of this phenomeon, study must be made of young children in order to understand their present social relations and to understand what factors may influence their social relations in the future. The focus of the present study is on the social relationships of the potentially creative nursery school child.

Procedure

The purpose of this study is to investigate the relationship between changes in the social value of nursery school children and their potential creative ability. The steps involved in this study are as follows: (1) a survey of the literature for an understanding of the personality characteristics and the social relationships of creative individuals of all ages, and for the selection of instruments for measuring the social value and potential creativity of the young child; (2) examination of the results of a small pilot study of nursery school children in which nursery school children's freedom to express themselves and their disposition for arousing altruistic responses in their peers were measured; (3) formulation of the design for the present study based upon investigation of the literature and of the pilot study; and (4) the analysis and interpretation of the results.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Extensive study has been done on the subject of creativity. Creative individuals have been identified in a diversity of ways and a variety of personality characteristics and motivating factors of creative individuals have been pointed out.

The methods by which persons have been identified as being creative have included: experiments, psychological tests, judgments by professionally qualified people and nominations by peers and superiors. Also people of generally acknowledged "eminence" and persons who are in professions which demand originality have been considered creative.

Despite the numerous methods of identifying creativity, certain personality characteristics have consistently been associated with creative individuals. This chapter will include a discussion of the literature which deals with these personality characteristics and their relationship to creativity, a description of the instruments which will be used in this study to measure the social value of the preschool child and his potential creativity, and a report of the pilot study.

Personality Characteristics of Creative Individuals

Adults

Creative adults have been studied extensively. Some investigators have found that creative adults are more withdrawn and less friendly than the general population. These adults want to be self-sufficient and independent. They do not adhere to social standards and dictates. Creative adults are more concerned with ideas and things than with people and are willing to sacrifice material pleasures for personal success in their work. Some creative individuals are dominant, more inclined to lead than to follow. These individuals have appeared rather hostile and aggressive. (6,7,13,15).

Some creative adults have been described as being radical and Bohemian. They reject the idea that they must be civilized members of our society, that they should shun the primitive, the uncultured, the naive, the magical, the nonsensical (4). They have radical social views. Bohemian unconcern and radicalism may be regarded, however, as conditions and consequences of continued adjustment, rather than as essential for creative expression (5).

Studies of specific groups of creative individuals in which the subjects rated themselves or took personality tests have shown these individuals to possess characteristics similar to those mentioned above. Outstanding art students, selected by faculty, were found to be quiet and introverted and to suffer from guilt feelings. They preferred to leave home rather than have conflicts with parents. This tendency to depend upon an esoteric circle in which to withdraw for physical and emotional support has been found in other creative persons (13).

Creative scientific personnel, chosen on the basis of productivity, rated themselves as more original, less contented, less conventional, more imaginative, more curious, enthusiatic, more impulsive, more self-confident, more leading and less worrying than the average individual (21). Air Force personnel, identified as being creative by personality tests, rated themselves as being affected, aggressive, outspoken, sarcastic, strong and suggestible (2).

In still another approach to the study of the creative adult, persons experimentally identified as being independent in judgment characterized themselves as being original, emotional, artistic, and as having more emotional reactivity, as being demanding, emotional, excitable, moody and as lacking social ease, as being tactless, reckless, forgetful (3).

Adolescents

A major contribution to the study of creative adolescents has been made by Getzels and Jackson (8). They compared adolescents who scored high on measures of creativity, but lower on intelligence tests, with adolescents who scored high on intelligence tests, but lower on creativity measures. The creativity test included: (a) word association, in which the subject was asked to give as many definitions as possible to fairly common stimulus words; (b) uses for things, in which the subject was required to give as many uses as he could for objects that customarily have a stereotyped function; (c) hidden shapes, for which part of Cattell's objective analytic test battery was used; (d) fables, in which the subject was to compose three different types of endings for each of four fables; and (e) make up problems, in which the subject

was presented with four complex paragraphs containing many numerical statements and was required to make up as many mathematical problems as he could from these.

Stories were composed and pictures were drawn by both groups. The highly creative group scored significantly higher in stimulus-free themes, unexpected endings, humor, incongruities and playfulness and showed a marked tendency toward more violence.

The values of these two groups of adolescents were also studied. Both groups agreed on qualities that lead to adult success and on the qualities which their teachers prefer in their students; however, the two groups differed in the value they placed on these qualities for themselves. The adolescent in the "intelligent" group wanted for himself qualities he believed made for adult success and were similar to those he believed his teachers liked; whereas, the adolescent in the "creative" group wanted qualities having no relationship to those he believed his teachers liked. Also, the occupational goals of the adolescent in the "creative" group were more diffuse and eccentric than those of the adolescent in the "intelligent" group.

Teachers rated the highly intelligent as being more desirable students than the highly creative even though the achievement of the two groups was comparable. The creative students may be more difficult to get along with and since their values are different they are likely to view objects and events differently than other students. Their actions may be viewed as threatening or hostile, but may be only an expression of their own deep struggle to reconcile their image of the world with the more conventional image.

The parents of the highly creative found in their children less objectionable characteristics and pushed them less toward scholastic achievement than did the parents of the highly intelligent. Qualities which parents of the highly creative preferred in their children's friends included a sense of values, genuine interests, and openness as opposed to secretiveness. On the other hand, parents of the highly intelligent group preferred qualities such as good family, good manners and studiousness.

From this study by Getzels and Jackson (8) one can see that creative adolescents are regarded by society in much the same nammer as are creative adults. This rejection by society of creative individuals may be due to their objectionable personality characteristics which may in turn be the result of attempts by creative persons to adjust to pressures from society to conform.

Grade School Children

The most outstanding research on the study of the creative grade school child has been done by Torrance (18). To identify the creative child he used 25 tasks calling for divergent solutions to a problem and the types of thinking theoretically involved in creative behavior, for example, the ask-and-guess test. This test requires a child to ask questions about a picture, questions which cannot be answered by looking at the picture, and to make guesses about the possible causes and consequences of the behavior depicted. Responses are evaluated in terms of Guilford's (9) factors for identifying creative talent, such as sensitivity to problems, ideational fluency, flexibility and originality.

Creative writing is another example of the tasks used by Torrance to measure creativity.

Torrance (18) also studied the place of creative children in a group. Children were asked to name their best friends, those who aggressively speak out their ideas, those who have the most wild or silly ideas, and those who don't tell their ideas. The way in which the creative children are perceived by their peers can be summarized by grades.

First and Second Grades.- There was a general tendency for children chosen most frequently on the good-ideas criterion to have moderate creative thinking scores. Highly creative boys were frequently chosen as having silly ideas and ideas for being naughty.

Third Grade.- Highly creative girls tended to be chosen frequently on the good-ideas criterion. Highly creative boys tended to be nominated as having silly ideas and ideas for being naughty.

Fourth Grade.- Only a few of the children most frequently chosen on the good-ideas criterion scored high on creative measures. (Interestingly, in other research Torrance (17) has found a drop in originality at the fourth grade level.)

Fifth Grade.- Highly creative fifth graders were nominated quite frequently on the good-ideas criterion, but moderately creative subjects were named most frequently.

Sixth Grade.- Most of the highly creative sixth graders were chosen rather frequently on the good-ideas criterion.

From this study, one can see that creative grade school children are appreciated more by their peers than are the creative adolescents and adults. Grade school children, especially the younger ones, may possess fewer objectionable personality characteristics than do creative

adolescents and adults, which may partially explain this acceptance of the creative grade school child by his peers.

A comparison of the more creative and the less creative child in each class was made by matching the boy and girl in each class who scored highest on the creativity measure with another child of the same sex and IQ. The highly creative were more frequently chosen than their matched classmates on the "wild ideas" and "naughty ideas" criteria. They were nominated more frequently by teachers as talkative and as having wild ideas.

The influence of peer groups on creative children was studied by forming groups of five each, including one of the most creative, and giving them the task of discovering ways to use science toys. There was evidence of pressure against the most creative member of each group. Sixty-eight per cent of the most creative initiated more ideas than any other group member, whereas only 24 per cent of these children were seen by the other group members as making the most valuable contributions. Some of the techniques used by the group members to control the creative individuals were aggression and hostility, criticism, rejection and/or ignoring, the use of organizational machinery to limit the scope of operation and the imposing of sanctions.

Three personality characteristics stand out as differentiating the highly creative children from the less creative, but equally intelligent children. First, the highly creative children have a reputation for wild or silly ideas; second, their work is characterized by the production of ideas "off the beaten track, outside the mold"; and third, their work is characterized by humor, playfulness, relaxation, and relative lack of rigidity.

Torrance states that creative individuals do possess characteristics generally considered somewhat obnoxious. They do create problems for their parents, siblings, peers, teachers and supervisors. "A large share of the highly creative child's adjustment problems appear to be centered in his psychological isolation and estrangement from his peers and teachers." (19, pp. 315). Torrance believes that in helping creative individuals in their personality development one goal is to help them be less obnoxious without sacrificing their creativity.

Preschool Children

Little research has been done on creativity in the preschool child. Markey (12) studied the imaginative behavior of the preschool child and found that the total amount of imaginative behavior increases with age. Imaginative behavior was measured in this study by items of overt imaginative behavior and language, by leadership in imaginative games and by participation in imaginative games. Children were observed during free play and in two experimental situations, one a block building game and the other a housekeeping game. She concluded that (a) the same test of imagination is not equally valid for all ages, (b) the level of the child's understanding or comprehension influences the type of imaginative response, and (c) a single test of imagination does not tap all the imaginative resources of the individual.

Northway and Rooks (14) studied the relationship between creativity and sociometric status in children of preschool age. The measure of creativity in their study was actually a measure of nonconformity. A simple formboard task, in which the child was free to follow a model or not, was used to determine whether the child was a copier or a noncopier.

Comparison of the conformity scores and sociometric scores of these preschool children revealed that the nonconforming preschool child was chosen more frequently on the sociometric test. Freedom to use nonconforming behavior is one characteristic of the creative individual.

An instrument for measuring a preschool child's freedom to express himself in exploring and manipulating his environment has been developed by Azbill (1). Nursery school children were used as subjects in this study and they showed marked differences in their freedom to express themselves. If every child is essentially uninhibited when born, this freedom to express must have been encouraged in some children and stifled in others by the socialization process to which they are exposed. The findings of Azbill's research indicate that this stifling has occurred by the time the child is five years old.

Summary

A review of these studies indicates that the creative preschool child and early elementary grade school child is appreciated more and better accepted by his peers than the creative adolescent or adult. The younger child does not seem to possess the objectionable personality characteristics which are associated with the creative adult. More study needs to be done with the preschool child in order to understand what factors may stifle his creativity and what factors cause him to acquire personality characteristics which make him "obnoxious" as he grows older.

Measurement of Social Value

The term social value includes an individual's desirability as an associate and his disposition for evoking altruistic responses in others. It is more inclusive than the term sociometric status; however, both aspects of social value can be measured by a sociometric test.

Lindzey and Borgatta (11) have stated the requirements for a sociometric test in detail. Such a test should define the limits of the group, allow choices to be made privately, allow the subjects to indicate individuals they choose or reject in terms of specific criteria, and provide opportunity for some course of action. The tests to be used in the present study meet these requirements.

A three-choice sociometric test for the study of a young child's disposition to evoke altruistic responses in others was developed by Starkweather (16). She compared the results of a three-choice test, in which each subject selected three friends, with the results of a paired-comparisons test, in which each subject made a choice between each of all possible pairs of individuals in the group. A study of various scoring methods indicated that a 2-1-1 weighting of the subject's three choices gave the most valid results. The subject's first choice, which was given a weighed score of two points, was apparently of greater significance than his later choices. Raw scores on this test could be converted to rank order scores for comparison with other data.

Underwood (20) used this same type of sociometric test in order to study two aspects of social value and to study the value of one or more sessions of the tests.

The test designed to measure an individual's desirability as an associate will be referred to as the Be-Near Test and the test designed

to measure an individual's disposition for evoking altruistic responses in others will be referred to as the Benefit Test. In comparing the results of these two tests, Underwood found that there was no significant relationship between the two; therefore, they were accepted as measuring two different aspects of social value.

In the Be-Near test each child chose someone to join him in an activity. The type of activity specified determined to some extent what child would be chosen. The types of activities used in this test included (a) playing with special materials, (b) taking an excursion, and (c) listening to stories. A comparison was made of children's sociometric scores in these different types of activities. The correlation between playing with special materials and taking an excursion was rather high, indicating that children's social value in these activities is somewhat similar. Listening to stories correlated low with the other two activities. A listening activity does not involve so much social interaction as the other activities. This is a possible explanation for the low correlation.

One session of the tests of social value was found to give more valid results than three sessions. There was a much higher correlation (rho = .721; $p < .02$) between the first session of the Three-Choice Be-Near Test and a Paired-Comparisons Be-Near Test, accepted as the criterion of validity, than between three sessions of these two tests.

Measurement of Potential Creativity

Little research has been done in the measurement of potential creativity of the preschool child. Markey (12) studied the imaginative behavior of the preschool child, and Northway and Rooks (14) studied

non-conformity. Both of these types of behavior have some relationship to the expression of creativity. Azbill (1) designed a task for measuring potential creativity in the preschool child. This task measures a child's freedom to express himself in exploring and manipulating his environment and is a measurement of potential creativity only to the extent that one accepts such freedom as an essential characteristic for creativity. The task designed by Azbill will be used in the present study to determine the potential creativity of the preschool child.

In order to measure a child's freedom to express himself in exploring and manipulating his environment, it is essential (a) that the child be observed in a situation in which social influences are at a minimum, (b) that simple and relatively unfamilar toys be used, toys which can be put to a variety of uses and combined in play. In Azbill's study each subject-child was alone in the research laboratory where he played with simple toys in any manner he chose. The child was observed through a one-way mirror and a record was made of his activity. Each child's freedom to express himself was indicated by the variety of ways in which he played with the toys.

The categories used in judging the freedom of each child's activity were defined as follows: (a) sensory experience and manipulation, i.e., learning about the toys by tasting, feeling, listening, etc.; (b) action, i.e., playing an active game with one or both toys; (c) construction, i.e., building something with one or both toys; and (d) combination, i.e., using the toys together in play.

Pilot Study

Subjective observations and a pilot study suggested that there is a relationship between changes in social value and potential creativity. A few university staff members observed that the more free and imaginative nursery school children seemed to be valued more highly by their peers at the end of the school year than at the beginning. A pilot study conducted with nine nursery school children indicated that such a relationship might be real.

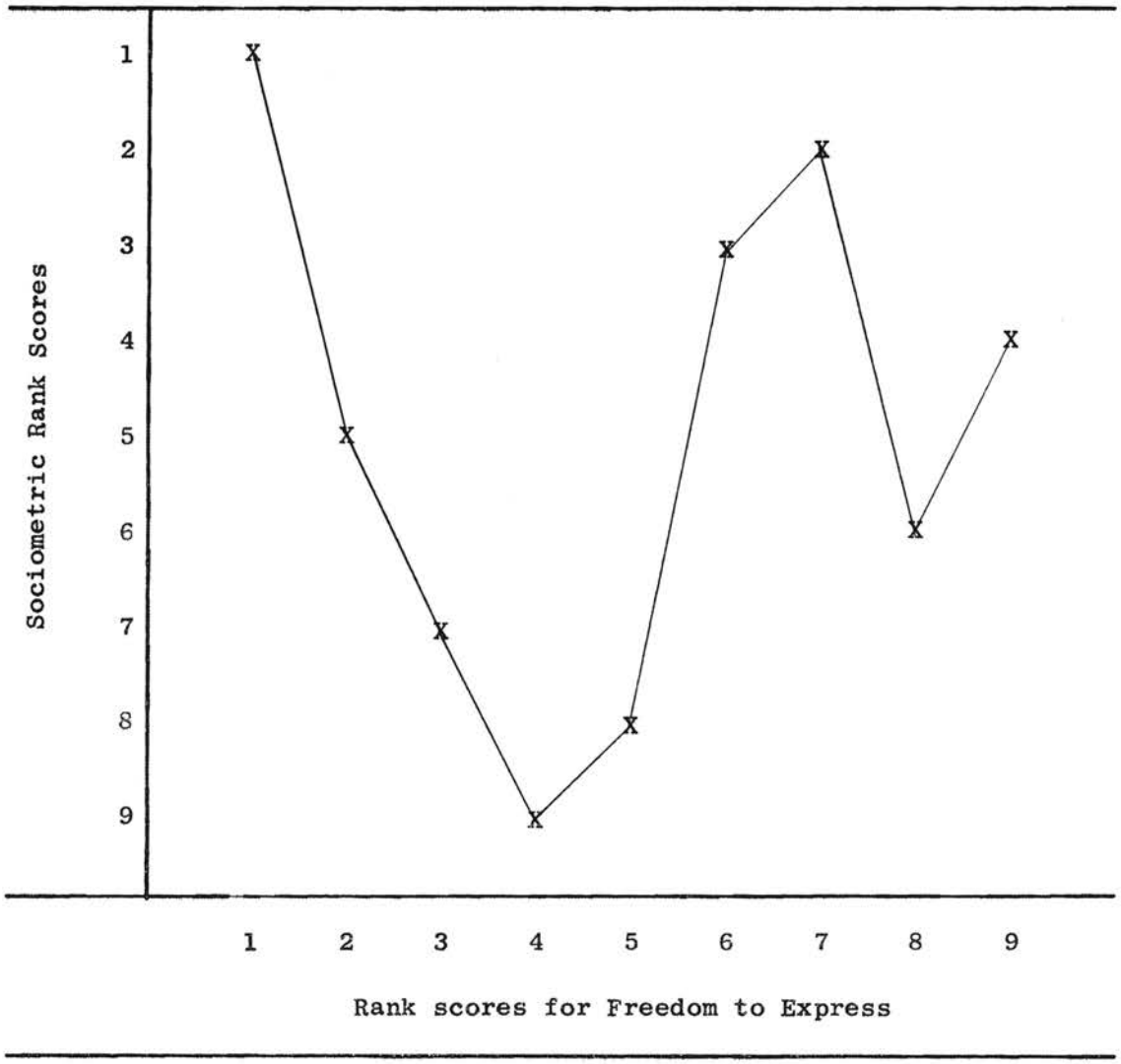
In the pilot study, a freedom score, i.e., a score representing the child's freedom to express himself in exploring and manipulating the environment, and a sociometric score from a paired-comparisons test were obtained for each of the nine children. The relationship between these two sets of scores, as presented in Table I, p. 17., appears to be curvilinear, i.e., individuals who scored high and those who scored low on the freedom test tended to score high on the sociometric test.

The measure of social value in the pilot study was incomplete. An individual's capacity to arouse altruistic responses in others was measured, but not his desirability as an associate. The present study will include both aspects of social value.

Several questions can be raised from this unpublished data. (1) Is the relationship between a child's social value and his freedom to express himself curvilinear? (2) Does a similar relationship exist for both aspects of social value? (3) Does the social value of potentially creative nursery school children change from the beginning of the school year to the end?

TABLE I

A GRAPHIC REPRESENTATION OF THE RELATIONSHIP BETWEEN RANK SCORES FOR FREEDOM TO EXPRESS AND SOCIOMETRIC RANK SCORES FOR PILOT STUDY NURSERY SCHOOL CHILDREN. (N=9)



Implications for the Present Study

The literature reviewed describes ways in which creative individuals have been identified and describes some of their personality characteristics which make social adjustment difficult. The identification of young children who are potentially creative and the study of their relationship to others is necessary in order to understand this difficulty and take steps to alleviate some of the problems of social adjustment faced by creative persons.

The purpose of this study is to investigate the relationship between potentially creative children and their peers. In order to do this, instruments are needed to measure a child's creativity and his social value to the group. Azbill's research task for measuring a child's freedom to express himself will be used to determine each child's potential creativity. The sociometric tests developed by Starkweather (16) and Underwood (20) will be used to measure each child's social value in the group. Both aspects of social value will be measured, the child's capacity for arousing altruistic responses in others and his desirability as an associate. Particular care will be taken in the Be-Near Test to use activities involving obvious participation rather than a spectator activity.

Research evidence indicates that younger children who are creative are more appreciated and better accepted by their peers than are older children and adults. The question still remains as to whether this is true of preschool children.

CHAPTER III

METHOD AND PROCEDURE

The purpose of this research was to study the relationship between changes in the social value of nursery school children and their creative ability. The social value of a child was determined by his capacity to arouse altruistic responses in his peers and the extent to which his peers desire to be near him or want his company. The potential creativity of a child was determined by a measure of his freedom to express himself in exploring and manipulating his environment. Changes in the social value of each child were determined by measuring his social value at the beginning of the school year and again at the end.

Subjects

The subjects used in this study were 14 children, seven boys and seven girls, enrolled in the Oklahoma State University laboratory nursery school. The age range of these children at the beginning of the study was three years eight months to four years six months. Descriptive data of these children is included in the Appendix, Table IV, p.43. At the time of the first sociometric testing there were 16 children in the group, however, two of these children dropped out of nursery school and were necessarily eliminated from the study.

Measurement of Social Value

Two sociometric tests were used to measure social value. These gave a more complete picture of social value than would one sociometric test. One test, referred to as the Be-Near Test, measured each child's desirability as an associate. The other test, referred to as the Benefit Test measured each child's capacity for arousing altruistic responses in others. These tests were administered to each child in the fall, after the children had been in nursery school about two months, and again in the spring, approximately six months later.

The Be-Near Test and the Benefit Test were similar in design. For both tests the limits of the group were defined by means of photographs, mounted on 4" x 6" cards; each subject was allowed three choices which were made in private and in terms of specific criteria; the choices were followed by an immediate course of action; and a 2-1-1 weighting of scores was used.

Be-Near Test

The Be-Near Test was designed to measure a child's desirability as an associate and for this each child was given an opportunity to choose someone to join him in a specified activity. The subject-child was shown the photographs of the other children, one at a time, and was asked to identify each child. As each child was named, his photograph was placed on the table. The subject-child was then told that he could choose someone to join him in a specified activity. He named or pointed to the child whom he desired. He was then asked to make a second and a third choice in case the previously named child (children) could not join

in the activity. After the subject-child had made his choices, he and the experimenter invited one of the chosen children to join in the activity which followed immediately.

The activity used for the first session of the Be-Near Test was the making of a collage. Numerous shapes, textures and colors of materials were available for pasting in any manner onto a large sheet of construction paper. The activity for the second session was the decorating of a basket. This was appropriate as May day was near. Again materials of various shapes, textures and colors were available with which to decorate the basket. These activities took place in a near-by building with which the children were familiar. The name of the subject-child was put on his product, regardless of the help he received. If the subject-child desired, his product was displayed in the nursery school. The nursery school children enjoyed the activities, were eager to go, and many wanted to go again.

Benefit Test

The Benefit Test was designed to measure a child's capacity for arousing altruistic responses in others. Each subject-child was given the opportunity to give a gift to three other children. The gifts used for the first session were small flags. Miniature parasols, whistles, and yo-yo's were used as gifts for the second session.

Each child was shown photographs of the children in the group as was done in the Be-Near Test. The experimenter then presented the subject-child with one of the gifts. She then gave him another gift identical to the he had received and said, "Here is another gift that you may give to someone." The subject-child then placed the gift upon

the picture of the child to whom he wanted to give it. In this manner each subject-child gave three identical gifts, one at a time. He then helped place the gifts in envelopes designated as belonging to the children he had chosen. This method allowed the subject-child's choices to be private.

Scoring

For both the Be-Near Test and the Benefit Test, a 2-1-1 weighting of scores was used, i.e., two points was given for each first choice and one point was given for each second and third choice. Starkweather (16) demonstrated this method of scoring to be the most valid. A raw score was obtained for each child by totaling the number of points he received. This score was then converted into a rank order score for use in a comparative study of social value and potential creativity.

Measurement of Potential Creativity

A personality characteristic which is accepted as essential for the expression of creative ability is the psychological freedom of the individual. In the present study evidence of this freedom is accepted as indicative of potential creativity. A task, developed by Azbill (1) and designed to measure a child's freedom to express himself in exploring and manipulating his environment, is accepted as measuring psychological freedom and thereby indicating the potential creativity of the child.

In this task each child plays by himself with a series of toys which comprise the research instrument. Each child's score is determined by the variety of ways in which he plays with the toys.

Research Laboratory

The research laboratory in which each child was tested was a room approximately 25 feet long and 15 feet wide. The room was empty with the exception of a small table and two chairs. The table on which the toys were placed was approximately two-and-a-half feet wide and five feet long. A strip of black masking tape was placed across the center of the table, as a psychological barrier. A chair was placed at each end of the table. One wall of this room contained a one-way mirror through which the child could be observed from an observation booth.

Description of the Toys

Certain criteria were accepted as necessary for a research instrument designed to measure a child's freedom to express himself in exploring and manipulating his environment. Simple, relatively unfamiliar toys which could be combined in play should be used. The following toys fulfill these criteria.

(1) Playskool toy.- This toy had a natural wood circular base, six inches in diameter and one inch thick. Three pegs, three inches high, fitted into three holes in the base. A wooden ball fitted on top of each peg.

(2) Train sections.- Six flat interlocking train sections of natural wood six inches long and two-and-a-half inches wide.

(3) Wooden blocks.- 20 one-and-three-eights inch natural wood cubes.

(4) Cork balls.- 24 natural cork balls one inch in diameter with a hole through the center of each ball.

(5) Pipe cleaners.- 24 pipe cleaners of the same color 12 inches long.

(6) Dump truck.- The dump truck, made of wood, was 12 inches long and had wheels so that it could be rolled. The dump part of the truck could be raised or lowered by a metal handle and the tail gate could be swung around.

(7) Red play dots.- 50 pieces of red rubber one-half inch in diameter and three-fourth inch thick.

(8) Wax discs.- 16 green wax discs two inches in diameter and three-fourth of an inch thick.

(9) Pan of water.- Three inches of water in a clear plastic pan 13" x 9" x 5".

These toys were presented to the subject-child in groups of two with the exception of the Playskool toy which was presented by itself. The toys were presented to each child in the following sequence: (1) Playskool toy, (2) train sections and wooden blocks, (3) cork balls and pipe cleaners, (4) dump truck and red play dots, and (5) wax discs and pan of water. When two toys were presented together, one was placed on one end of the table and one on the other end.

Procedure

In order that maximum freedom of expression be encouraged, each child was given an opportunity to become familiar with both the laboratory and the experimenter before he was actually tested. At the time of the testing, the experimenter took each child into the research laboratory by himself. She showed him the Playskool toy which was on the table and said, "My, that isn't very much to play with, but you go ahead and play with it any way you want to and I'll get some other toys." At this point she left the room obstensibly to get more toys.

A taped record was made of the child's behavior while he played alone in the research laboratory. When the child showed signs of being through playing with the toys, the experimenter returned, removed the toys with which the child had been playing, gave him a different set of toys, and again excused herself from the room. This procedure was repeated until the child had played with all of the toys.

Scoring

The taped records of each child's activities were transcribed. These records were then edited, i.e., grammar was corrected and irrelevant material was deleted. The edited records were then scored by four judges, graduate students in Child Development.

In the scoring, each child was given one point for each type of behavior that indicated freedom to express himself in exploring and manipulating the toys. Scoring was done as follows: (a) one point for each different type of sensory experience, (b) one point for each different action or game, (c) one point for each different construction, and (d) one point for combining the toys in play at any time. The raw scores were then converted into rank order scores for use in a comparison with sociometric scores.

Recommended Analysis

From data obtained in this study the following analysis should be made: (a) a study of interjudge reliability, (b) a comparative analysis of the results of the Benefit Test and the Be-Near Test administered in the fall (first session) and again of the results of these two tests administered in the spring (second session), (c) an analysis of the

relationship between social value and freedom to express, and (d) a study of sex differences.

CHAPTER IV

RESULTS

The results of the test measuring psychological freedom and the two tests which measure social value, the Benefit Test and the Be-Near Test, are presented in this chapter. The interjudge reliability for the test measuring psychological freedom and the power of discrimination of this test are discussed; the results of the two tests for social value are compared and related to the results of the test for psychological freedom; sex differences in social value are discussed; and teachers' evaluations of individual cases are presented.

Psychological Freedom

The task designed by Azbill (1) to measure a child's freedom to express himself in exploring and manipulating his environment was used in this study to measure potential creativity. In this task each child played by himself with a series of toys and his freedom score was detmined by the variety of ways in which he played with the toys. Each child was given a rank order freedom score determined from the total of the ranks given to him by each of four judges.

Interjudge Reliability

The Kendall coefficient of concordance was used to determine the interjudge reliability. The over-all agreement among the rankings of

the four judges was high ($W = .87$; $p < .001$). This agreement among the four judges indicates that the best estimate of the "true" ranking of the children is provided by the order of the sum of ranks (Table II, p.29).

Inasmuch as each judge followed simple written directions in ranking the children, rather than receiving personal training in judging, the high agreement among the judges also suggests that this method of scoring psychological freedom (i.e., children's freedom to express themselves) can be used reliably in situations in which extensive training of judges would be impractical.

Power of Discrimination

The range of raw scores obtained by the children on each part of the freedom task was from two to 25, a score of two indicating extremely inhibited behavior and a score of 25 indicating free behavior. The writer accepts this spread of scores as an adequate indication of the task's power of discrimination.

Social Value

Two tests were used to measure social value in this study. The Benefit Test measured a child's disposition for arousing altruistic responses in others and the Be-Near Test measured a child's desirability as an associate. These two tests were administered in the fall, after the children had been in nursery school about two months, and again in the spring, approximately six months later.

TABLE II

RANK SCORES ASSIGNED BY EACH OF FOUR JUDGES TO INDIVIDUAL CHILDREN PARTICIPATING IN A STUDY OF THE RELATIONSHIP BETWEEN CHANGES IN SOCIAL VALUE AND POTENTIAL CREATIVITY

	Individual Children													
Judges	A	B	C	D	E	F	G	H	J	K	L	M	N	O
W	11.0	8.5	5.5	10	4.0	7.0	1.0	5.5	12.0	13	14	3.0	8.5	2.0
X	10.5	8.0	12.0	4	6.5	6.5	2.0	5.0	10.5	13	14	3.0	9.0	1.0
Y	13.0	11.0	9.0	8	4.0	7.0	2.0	6.0	12.0	10	14	3.0	5.0	1.0
Z	11.0	6.0	10.0	12	3.0	5.0	2.0	7.0	8.5	13	14	4.0	8.5	1.0
Total	45.5	33.5	36.5	34	17.5	25.5	7.0	23.5	43.0	49	56	13.0	31.0	5.0
Rank	12	8	10	9	4	6	2	5	11	13	14	3	7	1

Comparison of the Results of the Benefit Test and the Be-Near Test

An analysis of the relationship between these two tests indicated that in the fall the results of the two tests were similar (rho = .58; $p < .05$)*. The children who ranked high on the Be-Near Test also ranked high on the Benefit Test.

This relationship between the two tests did not exist in the spring, i.e., six months later (rho = -.06; n.s.). Apparently in the spring the children discriminated more than they did in the fall and made their choices in terms of a child's capacity for arousing altruistic responses and his desirability as an associate.

Sex Differences in Social Value

A comparison of the scores of the boys and girls indicated that a sex difference in social value existed in the fall, but not in the spring (Table III, p. 31). The girls were chosen more often than the boys in the fall as indicated by their higher rank scores (Girls: 40.0 and 41.5; Boys: 65.0 and 63.5).

Relationship Between Social Value and Psychological Freedom

An analysis of social value and psychological freedom as measured in this study indicated that there was no significant relationship between the two. The curvilinear relationship which seemed to exist

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*Spearman Rank Order Correlation

between social value and psychological freedom in the pilot study, referred to earlier, was not substantiated in the present study. However, during the fall testing the four children who were chosen most frequently on both tests of social value were children who were moderately free as determined by the task measuring psychological freedom, i.e., these children were neither extremely free nor inhibited. Here a curvilinear relationship is suggested, but no such relationship was evident in the spring testing.

TABLE III

SUMS OF THE RANK SCORES OBTAINED BY BOYS AND BY GIRLS ON FALL AND SPRING TESTS OF SOCIAL VALUE

	Boys (N=7)	Girls (N=7)
Be-Near Test		
Fall	65.0	40.0
Spring	57.5	47.5
Benefit Test		
Fall	63.5	41.5
Spring	52.5	52.5

Individual Cases

The present study necessarily involved a small number of subjects, and on this small group statistical analysis showed no clear-cut relationship between social value and psychological freedom (potential creativity). Certain tendencies were apparent for the group as a whole, and a few individual children showed marked changes in social value from fall to spring.

In view of this, the nursery school teachers' evaluation records for the individual children were examined in an effort to discover factors which might be considered in future research.

The "Potentially Creative" Children

Psychological freedom was accepted in this study as indicating "potential creativity". The potentially creative children, i.e., those who ranked high on the task measuring psychological freedom, were the more isolated children in the group. They often played alone and seemed oblivious to the presence of other children playing near-by. They did not push their way into a group, but when they were included, played cooperatively. They were not aggressive and did not stand up for their rights, especially if it involved physical conflict. However, these children were keen observers, alert and curious. They had definite ideas of their own and would readily express them to an adult.

These potentially creative children were emotionally sensitive. They cried easily and did not have so much emotional control as many of their peers. They were affectionate and expressed these feelings freely also.

One of these children (Child-M) was the youngest child in the nursery school group and seemed to be insecure and rather dependent upon adults for support. Another of these children (Child-O) who seemed dependent upon adults was not developed physically to the extent of most of the other children in the group. Two of these children (Child-M and Child-G) had marked speech problems which interfered with their communication with the other nursery school children.

These factors undoubtedly contributed to the isolation of these children. In spite of their isolation, however, these children seemed happy.

The "Inhibited" Children

The children who ranked lowest on the task measuring psychological freedom were necessarily more inhibited than the other children in their play with the research toys. Certain characteristics seemed to set them apart from the group.

These children were not well-accepted by the group. Two of them (Child-A and Child-L) displayed aggression in their attempts to gain acceptance. After finally becoming accepted, these two children seemed to depend upon a small group for support.

Another child (Child-J) watched the group longingly, but did not attempt to join. He apparently wanted to be accepted, but did not display any overt attempts for acceptance.

Another child (Child-K) was extremely rigid, i.e., she had a set pattern for doing things and expected this pattern to be followed. She did not cooperate with the adults or her peers, but expected them to cooperate with her.

Changes in Social Value

Child-O scored higher on the spring Benefit Test than she did on the fall Benefit Test. This child was small in stature and quiet in manner. She was neither strong nor active. As the year progressed and the children became better acquainted with her, they apparently recognized these characteristics and wanted to do things for her.

Child-J scored much higher on the spring Benefit Test than on the fall Benefit Test. He was another quiet, shy child; and after becoming better known by the group, he aroused many more altruistic responses than he did at the beginning of the year.

Child-D scored much lower on the spring Benefit Test than she did on the fall Benefit Test. During the course of the year this child was aggressive and sometimes destructive. She was guilty of seemingly unprovoked attacks on the other children. During the school year, as the children became better acquainted with her, they apparently lost their desire to do things for her.

Three children (Child-E, Child-K, and Child-A) scored much higher on the spring Be-Near Test than on the fall Be-Near Test. Child-E, one of the potentially creative children, was chosen by the group more frequently than were the other potentially creative children. He did not possess the characteristics which contributed to the isolation of the other potentially creative children (emotional dependency on adults, physical immaturity and speech problems). Perhaps this fact and his psychological freedom combined to increase his desirability as an associate as the year progressed. Child-K seemed to change during the course of the year from an extremely rigid and uncooperative child to one who was less rigid and more cooperative. This change could be an indication that she changed in her psychological freedom. If this was true, her acceptance by the group might be explained by their recognition of her increased freedom. Child-A started to school about a month later than the other children; this alone could account for his lower score on the fall Be-Near Test than on the spring Be-Near Test.

The increase in his desirability as an associate showed no relationship to his freedom score.

Child-H scored lower on the Be-Near Test in the spring than she did in the fall. She showed an increased dependence upon adults in the spring. At the same time she lost status in a clique of girls in the nursery school. This loss of status is reflected in her decreased test score.

Summary

The data collected and analyzed in this study have revealed some important findings.

1. The agreement between the rankings of the judges of the freedom task was high.

2. The freedom task did discriminate among the children.

3. Comparison of the results of the tests measuring social value, the Benefit Test and the Be-Near Test, indicated a high correlation in the fall, but a low correlation in the spring. The children were better able to discriminate between the two aspects of social value in the spring than in the fall.

4. Sex differences in social value existed in the fall, i.e., girls were chosen more frequently than boys on both tests of social value. This sex difference disappeared after the children had been in nursery school for several months.

5. A curvilinear relationship between social value and psychological freedom seemed to exist in the fall, i.e., children who were chosen most frequently on both tests of social value were moderately free children.

6. A study of individual cases revealed that the "potentially creative" children were emotionally sensitive and were isolates in the group; however, they seemed to be happy as isolates. The "inhibited" children were not well-accepted in the group and seemed unhappy about this. One set of characteristics seemed to be related to the isolate status of the potentially creative children, while a different set of characteristics were related to the lack of acceptance of the inhibited children, those who lacked psychological freedom.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the relationship between changes in social value of nursery school children and their creative ability. The subjects in the study were 14 nursery school children, three years eight months to four years six months of age. A task designed to measure a child's freedom to express himself in exploring and manipulating his environment was used to measure psychological freedom, which was accepted as indicative of potential creative ability.

Social value was determined by means of two sociometric tests, the Benefit Test and the Be-Near Test. The Benefit Test measured a child's capacity for arousing altruistic responses in others and the Be-Near Test measured his desirability as an associate. These tests were administered to each child in the fall after the children had been in nursery school about two months, and again in the spring, approximately six months later.

Comparison of the results of the tests measuring social value, the Benefit Test and the Be-Near Test, indicated a high correlation in the fall, but a low correlation in the spring. The girls were chosen more frequently than the boys on both tests of social value in the fall; no sex differences were apparent in the spring. Children who were chosen most frequently on both tests of social value in the fall were the

moderately free children. The "potentially creative" children, i.e., those children who were high in psychological freedom were isolates in the group; however, they seemed happy as isolates. The "inhibited" children, i.e., those children who lacked psychological freedom, were not well-accepted by the group and were dissatisfied with this status as indicated by their aggressive attempts for acceptance.

Implications for Future Research

The interjudge reliability for the task measuring psychological freedom was high, indicating that the use of one judge in scoring this task would be sufficient. The scoring method was such that it could be used in situations where extensive training of judges was impractical. The task measuring psychological freedom was administered only once in the present study. An examination of teachers' evaluations of the individual children indicated a major change in one child's behavior during the course of the year. This change seemed to indicate an increase in the psychological freedom of this child. This information suggests that psychological freedom should be measured both at the beginning of the school year and again at the end in order to determine the stability of this characteristic and to discover factors related to changes in psychological freedom.

The group of nursery school children studied was necessarily small; however, certain characteristics seemed to identify the potentially creative children and other characteristics seemed to identify the inhibited children. More children need to be included in a future study in order that the significance of these characteristics for creativity be determined. The potentially creative children in the present study

possessed certain handicaps, such as speech difficulties and physical limitation; however, these did not seem to affect their satisfaction with their status as isolates in the group. The parental handling of these children undoubtedly influenced their acceptance of their limitations, and therefore a study of parent-child relationships seems warranted.

In the present study there was a great deal of similarity between the results of the two fall tests of social value, but no similarity between the results of the spring tests. Apparently the children were better able to discriminate among their peers at the time of the later tests. This increased ability to discriminate may have been prompted by increased maturity; but more probably it was due to the fact that the children were better acquainted by the end of the school year. This suggests that nursery school children need a long period of acquaintance before a valid measure of social value can be obtained.

A curvilinear relationship between social value and potential creativity (psychological freedom) is suggested by the results of the fall tests. The children who scored the highest on the fall test of social value were the moderately free children. The children who were the most free and those who were the least free seemed to be ignored or avoided by the group. The potentially creative children were isolates and apparently attracted little attention early in the school year. The children who lacked psychological freedom tended to use aggressive means to be included in the group and were frequently avoided by the other children.

Sex differences were apparent in the tests measuring social value in the fall; the girls were chosen more frequently than the boys. One can speculate as to whether the important role of the mother in the life of the preschool child influenced the children's choices.

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APPENDIX

TABLE IV

DESCRIPTIVE DATA FOR INDIVIDUAL CHILDREN PARTICIPATING IN A STUDY OF THE RELATIONSHIP BETWEEN CHANGES IN SOCIAL VALUE AND POTENTIAL CREATIVITY: SEX, AGE, SCORES FOR RESEARCH TASKS

			Rank Order Scores				
			Potential Creativity	Social Value			
				Benefit Test		Be-Near Test	
Child	Sex	Age (Years-Months)	Freedom Task	Fall	Spring	Fall	Spring
A	M	3-11	12	7.5	5.0	6.5	1.0
B	M	4-2	8	14.0	12.0	13.5	13.5
C	F	4-3	10	5.0	5.0	5.0	7.5
D	F	4-2	9	3.0	14.0	4.0	5.0
E	M	3-10	4	7.5	9.0	9.5	2.5
F	F	4-2	6	3.0	3.0	2.0	5.0
G	F	4-6	2	11.0	12.0	9.5	11.0
H	F	4-2	5	1.0	5.0	1.0	7.5
J	M	4-2	11	11.0	1.5	9.5	13.5
K	F	3-11	13	11.0	12.0	12.0	2.5
L	M	4-5	14	3.0	7.0	9.5	11.0
M	M	3-8	3	7.5	9.0	13.5	11.0
N	M	4-0	7	13.0	9.0	3.0	5.0
O	F	4-1	1	7.5	1.5	6.5	9.0

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